UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/788,566	02/27/2004	Neal F. Vittitoe	2003-0173.02/4670-238	9095

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EXAMINER
WASHINGTON, JAMARES

ART UNIT	PAPER NUMBER
2625	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/788,566	VITTITOE, NEAL F.
	Examiner	Art Unit	
	Jamares Washington	2625	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>30 May 2007</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-7</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-7</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>30 May 2007</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Response to Amendment

1.   Applicant's amendments and response received on June 4, 2007 have been entered.

Claims 1-7 are pending with claims 5-7 having been amended. Applicant's newly amended

claims, specification, and arguments are addressed hereinbelow

Drawings

2.   Regarding the drawings received on June 4, 2007, appropriate corrections have been

made and entered into prosecution. Examiner accepts these drawings and withdraws objection.

Specification

3.   Regarding the specification, appropriate corrections have been made and entered.

Examiner accepts these corrections and withdraws objection.

Claim Suggestions

4.   Regarding claims 6 and 7, appropriate corrections have been made and entered to

establish proper antecedent basis for the claimed subject matter. Examiner accepts these

amendments.

Regarding claims 5 and 7, minor typographical errors have been corrected and entered.

Examiner accepts these amendments.

Claim Objections - 37 CFR 1.75(a)

5.   Regarding claim 6, appropriate amendment to the claim has been made to correctly

depend from claim 5. Examiner accepts amendment and withdraws objection.

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
>
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
>
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
>
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
>
> manner in which the invention was made.

8.   Claims 1, 2, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robert

P Loce et al (US 20030058474 A1) in combination with Joyce Farrell (Print Quality Metrics for

Grayscale Text).

        Regarding claim 1, Loce et al discloses a method of rending text in an image-forming

device ("...a method and apparatus have been developed...In one embodiment, the method

comprises determining a rendering quality related characteristic of the text component..." at

paragraph [8]) comprising:

        providing a user interface ("Many documents are created with electronic authoring

tools...In a personal computer environment, documents are created with word processing

programs. When these tools are used, an author specifies (...by active selection) characteristics

for the text used in the document" at paragraph [35]");

        receiving a "user-defined font...input" by a user from said user interface ("The text

feature characteristic recognizer 814 receives an image or document from an image

source...such as a document authoring tool..." at paragraph [44])'

        selecting a halftone screen for text based on text size and a user defined font "input"

("The halftone screen selector or generator 818 either selects a screen from a database of

available screens or generates a screen for halftoning a particular text component..." at

paragraph [47] "Examples of rendering quality related characteristics include...font size..." at

paragraph [8]");

        rendering the text with the selected halftone screen (Fig. 7, numerals 740 and 760)

However, Loce fails to teach the "user-defined font input" as being a font sharpening input.

Farrell teaches, in the same field of endeavor of enhancing print quality of text characters, font sharpening as an enhancement when rendering text to be printed ("Attribute metrics are measurements of identifiable features in print samples that are known to influence subjective print quality. For example...character jaggedness and character edge sharpness..." at page 1, paragraph 3, line 4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use font sharpening as taught by Farrell as the user-defined font input from the authoring tool as taught by Loce because "...character jaggedness and character edge sharpness are...very important attributes that have been shown to affect text print quality [1]". Correcting these attributes will allow for better character appearance and aid in print out readability.

Regarding claim 2, Loce of the Loce and Farrell combination teaches selecting a halftone screen comprising comparing the text size to the font sharpening threshold and selecting the halftone screen based on the outcome of the comparison ("...the determined rendering quality related characteristic (font size as described above) information is used to guide the selection 730...of a halftone screen..." Loce at paragraph [39]. "...additionally, where omega plane bits indicate a dimension such as a thickness or width of a text component, a halftone screen...is generated" Loce at paragraph [39].) Dimensions such as thickness or width of a text component is known in the art as being the components which, when adjusted, directly effect the visual clarity (sharpness) of text characters ("A screen can be selected to have a screen frequency or

period that is in closer harmony with the width or thickness of the main body 310. Such a

selection would provide a "K" with both <u>crisp</u> inner and outer main body edges" Loce at

paragraph [30]).

Regarding claim 5, the Loce and Farrell combination discloses a printing system ("...the

rendering device 826 is a xerographic printer" Loce at paragraph [49]) comprising:

a user interface as rejected above; a raster image processor ("...the text component

characteristic recognizer 814 maybe part of or work in close association with a rasterizer" at

paragraph [52] Fig. 8, numerals 814, 818, and 822.) programmed to render text using a halftone

screen with a halftone frequency selected based on text size and user-defined font sharpening

threshold input by a user via said user interface as rejected above; and a raster output device

operatively connected to the raster image processor to generate a visible output image using the

halftone image output by the raster image processor ("For example, the rendering device 826

may be an ink jet printer" at paragraph [49], Fig. 8 numeral 826).

9.   Claims 3, 4, 6, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over the

Loce and Farrell combination as applied to claims 1 and 2 above, and further in combination

with Yee S. Ng et al (US 7079287 B1).

Regarding claim 3, the Loce and Farrell combination teaches selecting a halftone screen

based on certain text character parameters ("...selecting a halftone screen based on a

compatibility with the rendering quality related characteristic of the text component..." at

paragraph [8], Loce).

The Loce and Farrell combination fails to teach selecting a halftone screen with a relatively higher halftone frequency when the text size is less than the font sharpening threshold, and selecting a halftone screen with a relatively lower halftone frequency when the text size is greater than the font sharpening threshold.

However, Ng teaches the above deficiencies in the Loce and Farrell combination (Since the edges of non-saturated text have a high likelihood to use mostly the high frequency soft pictorial screen...and while the interior of the larger text has a higher likelihood to use mostly the lower frequency screen..." at column 5 line 18). It is well known in the art that a higher halftone frequency screen is used to produce detailed, sharp images/text normally viewed at a close distance (e.g. small font) with respect to the viewer, because of the compactness of the halftone dots within a square inch. A lower halftone frequency screen would be used for larger font to avoid jagged artifacts.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the halftone screen frequency teachings of Ng in the Loce/Farrell combinatorial method above because a sharper text character would be produced for both small and large font thus enhancing readability.

Regarding claim 4, while Loce of the Loce, Farrell, and Ng combination teaches sending user input from a remote location (e.g. authoring tools via a computer system), the Loce, Farrell, and Ng combination does not expressly teach an operator panel on the image-forming device to receive user input.

However, it is well known in the art to provide an image-forming device with an operator panel to receive user input (Official Notice).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to provide Loce, of the Loce, Farrell, and Ng combination, with an operator panel on the image-forming device for receiving user input because one would need to control various printer functions.

Regarding claim 6, the Loce, Farrell, and Ng combination teaches the image output device as rejected above.

Regarding claim 7, Loce of the Loce, Farrell, and Ng combination teaches wherein the raster output device is an electrophotographic print engine ("In a xerographic environment, the rendering device 826 is a xerographic printer" Loce at paragraph [49]). It is well known in the art that electrophotography refers to producing photographic images by electrical means, and xerography is a form of electrophotography for "copying" documents. Therefore, a xerographic "printer" is a type of electrographic printer and the xerographic print engine described by Loce could very well be substituted with an electrophotographic print engine without teaching away from the invention.

Response to Arguments

10.   Applicant's arguments filed May 5, 2007 have been fully considered but they are not

persuasive.

Summary of Remarks: Regarding the argument that Loce does not disclose that a user

may determine or input the [font sharpening] threshold value. Loce does not disclose a user-

defined font sharpening threshold, nor a user interface with which to input the threshold. The

thresholds in Loce are fixed and nonadjustable by the user. Thus, Loce discloses an automated

system within the image forming device to recognize text component characteristics and select a

predetermined threshold from a database or generate a threshold in real time. Loce does not

disclose nor suggest a user-defined and user-inputted threshold.

Examiner's response: The font sharpening threshold, as suggested by the rejection of

claim 1 above, is inputted from the "personal computer system" and not the actual "authoring

tool". A computer system comprises a keyboard, monitor, and CPU with which one is able to

input information (i.e. font sharpening threshold levels as rejected in claim 1 above) to send to a

peripheral device such as a printer and in this manner, becomes a user interface. The user

defines the font sharpening threshold from the "personal computer system" which uses the

authoring tools to perform the sharpness adjustment. The thresholds disclosed by Loce are the

halftone screen thresholds and not the actual "text characteristics" thresholds which are

adjustable using the personal computer system's authoring tools. Applicant is referring to the

"predetermined" or "fixed" halftone screen thresholds which are used to perform the actual

halftoning, not the text characteristics adjustment. These screens are actually adjustable as admitted by applicant in the above remark: "Loce discloses that "[t]he halftone screen selector or generator 818 either selects a screen from a database of available screens or generates a screen for halftoning a particular text component in real time...". Therefore, Loce suggests a user-defined and user-inputted font sharpening threshold by the personal computer system which uses authoring tools for implementation.

Summary of remarks: Regarding the argument that Loce does not disclose that the electronic authoring tool is an input at all. It merely discloses that the document to be printed has to be created in some way prior to printing, one of which is an electronic authoring tool. Thus, the electronic authoring tool is not a user interface.

Examiner's response: Applicant is corrected in stating that the electronic authoring tool is neither an input nor a user interface. However, Loce discloses a "personal computer system" as rejected in claim 1 above, which uses the electronic authoring tool to perform the given operations. Thus, the personal computer system becomes the input device and becomes a user interface for inputting text characteristic selections by way of the authoring tool.

Summary of remarks: Regarding the argument that Loce does not disclose a user-defined or user-inputted font sharpening threshold. Therefore, receiving an image or document by the text component recognizer is not a user-defined font sharpening threshold input.

Examiner's response: As explained in the above response, Loce suggests a user-defined and user-inputted font sharpening threshold in which the image or document sent from the personal computer to the text component recognizer becomes a font-sharpening threshold input.

Summary of remarks: Regarding the argument that Ferrell has nothing to do with selecting a threshold for determining the halftone screens used for printing. Therefore, Ferrell does not disclose a user-defined font-sharpening threshold, nor a user interface with which to input the threshold.

Examiner's response: Applicant is correct in stating Ferrell has nothing to do with the above functions. However, the above functions are disclosed and suggested by Loce. Ferrell is merely a secondary teaching brought in by examiner to teach the fact that font sharpening is a well-known and important attribute to consider when rendering text (as rejected in claim 1 above) and would have been obvious to one of ordinary skill in the art to use the sharpening level adjustment of the authoring tools used in Loce to enhance text characters.

Summary of remarks: Regarding the argument that claim 5 is not made obvious by Loce and Ferrell because neither Loce nor Ferrell disclose a user-defined font sharpening threshold, nor a user interface.

Examiner's response: The user-defined font sharpening threshold and user interface are suggested by Loce in combination with Ferrell as stated above in the response to claim 1.

Summary of remarks: Regarding the argument that the sharpening threshold value must be entered prior to RIP processing. Because Ng teaches only post-RIP corrections, the user inputs of Ng cannot be font-sharpening thresholds for selection of halftone screens as taught by the present application. Claims 3, 4, 6, and 7 are patentable because neither Loce, Farrell, nor Ng, either independently or in any combination, disclose each and every claim limitation of independent claim 1. Therefore, claim 1 cannot be found to be obvious over any combination of these references. For at least these reasons, dependent claims 3, 4, 6, and 7 are not obvious over Loce, Ferrell, and Ng.

Examiner's response: Claim 1 was found to be obvious of the combination as stated in response 1 above. Regarding Ng, the reference was brought in as a secondary reference to teach the concept of using higher halftone frequency when text is relatively small and using lower frequency when text is relatively large as rejected in claim 3 above. The processing of Ng has no bearing on the claimed limitations presented in claim 3. All other "processing" type limitations were met by Loce and Ferrell as indicated.

Conclusion

1.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Jamares Washington whose telephone number is (571) 270-1585.

The examiner can normally be reached on Monday thru Friday: 7:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, King Poon can be reached on (571) 272-7440. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.
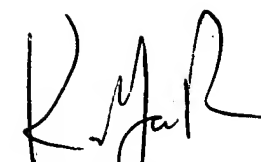
Information regarding the status of an application may be obtained from the Patent

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information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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July 10, 2007

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